Amendments To The Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) An internal broach having broach cutting teeth for internally broaching final profiles (12), ~~defined by~~ wherein each of the broach cutting teeth cut a chip which in total form a final bottom (14) and final profile flanks (15, 16), of female serrations of a work piece (8), comprising

- a shank (1), which leads in a direction of broaching (22) and has a central longitudinal axis (9); and

- a toothed section (2) with several rows (6) of broach cutting teeth (21a to 21f), the rows (6) being disposed successively counter to the direction of broaching (22);

-- with successive broach cutting teeth (21a to 21f) being allocated to each other for broaching a profile (12) of a depth;

-- with each of all the broach cutting teeth (21a to 21f) in the several rows of the toothed section having only one each of first and second sides ~~extending in a single curved plane~~ respectively facing the final profile flanks and a bottom cutting blade (23a to 23f) forming ~~the~~ an edge ~~of~~ on

a bottom cutting blade relief surface (24) which edge ~~is a single curved plane extending~~ extends as an arc of a circle between the first and second sides so that the cutting blade cuts over a full final profile width (b);

-- wherein the circles are concentric;

-- ~~with~~ wherein the bottom cutting blades (23a to 23f) of successive and associated broach cutting teeth (21a to 21f) ~~having~~ each cut the chip to a thickness corresponding to a pitch (a) ~~relative to~~ between the broach cutting teeth (21a to 21f) that lead in the direction of broaching (22) and forms the final bottom and a portion of the entire final profile flanks (15, 16) corresponding to the thickness of the chip cut, and;

-- ~~with~~ wherein the first and second sides ~~passing through~~ join the bottom-cutting-blade relief surface (24) ~~while forming~~ and form first and second edges;

wherein all of the first sides are guide flanks (26a to 26f), lie within a same curved plane with the first edges being guide edges (27a to 27f) without a cutting ability ~~forming~~ to form the allocated profile flank (15) ~~in the vicinity of the pitch (a)~~;

wherein all of the second sides are relieved surfaces (29a to 29c) ~~so as to~~ which do not touch the profiled flank (16) that the second sides face and which each extend in

its own curved plane over the entire height of the respective broach cutting teeth, wherein all of the second edges ~~being non-cutting~~ are relieved edges (28a to 28f) ~~forming~~ without a cutting ability to form the allocated profile flank in the vicinity of the pitch (a), and

wherein the broaching of the final profiles takes place exclusively by means of the bottom cutting blades.

2. (Original) An internal broach according to claim 1, wherein the guide edges (28a to 28f) of successive broach cutting teeth (21a to 21f) have no flank pitch.

3. (Currently Amended) An internal broach according to claim 1,

wherein the broach cutting teeth (21) [[,]] which are side by side relative to the direction of broaching (22), are disposed such that with respect to the central longitudinal axis (11) annular chip spaces (31) are arranged; and

wherein broach cutting teeth (21a to 21f), successive counter to the direction of broaching (22), are disposed in rows (6) ~~that are~~ so that all of the first and second sides are parallel to the central longitudinal axis (9).

4. (Currently Amended) An internal broach according to claim 1,

wherein broach cutting teeth (21)[[,]] which are side by side relative to the direction of broaching, are disposed such that with respect to the central longitudinal axis (11) helically extending chip spaces (31') are arranged; and

wherein broach cutting teeth (21a to 21f), successive counter to the direction of broaching (22), are disposed in rows (6) so that all of the first and second sides are parallel to the central longitudinal axis (9).

5. (Currently Amended) An internal broach according to claim 1,

wherein the broach cutting teeth (21'')[[,]] which are side by side relative to the direction of broaching (22), are disposed such that with respect to the central longitudinal axis (11) annular chip spaces (31) are arranged; and

wherein the broach cutting teeth (21''a to 21''c), successive counter to the direction of broaching (22), are disposed in twist-style rows (6'').

6. (Currently Amended) An internal broach according to claim 1,

wherein the broach cutting teeth (21''')[[,]] which are side by side relative to the direction of broaching (22), are disposed such that with respect to the central longitudinal axis (11) helically extending chip spaces (31') are arranged; and

wherein the broach cutting teeth (21'''a to 21'''c), successive counter to the direction of broaching (22), are disposed in twist-style rows (6'').

7. (New) An internal broach according to claim 1, wherein the pitch (a) is within a range of 10 to 80mm.

8. (New) An internal broach having broach cutting teeth for internally broaching final profiles (12), wherein each of the broach cutting teeth cut a chip which in total form a final bottom (14) and final profile flanks (15, 16), of female serrations of a work piece (8), comprising

- a shank (1), which leads in a direction of broaching (22) and has a central longitudinal axis (9); and

- a toothed section (2) with several rows (6) of broach cutting teeth (21a to 21f), the rows (6) being disposed successively counter to the direction of broaching (22);

-- with successive broach cutting teeth (21a to 21f) being allocated to each other for broaching a profile (12) of a depth;

-- with each of all the broach cutting teeth (21a to 21f) in the several rows of the toothed section having only one each of first and second sides respectively facing the final profile flanks and a bottom cutting blade (23a to 23f) forming an edge on a bottom cutting blade relief surface (24) which edge extends as an arc of a circle between the first and second sides so that the cutting blade cuts over a full final profile width (b);

-- wherein the circles are concentric;

-- wherein the bottom cutting blades (23a to 23f) of successive and associated broach cutting teeth (21a to 21f) each cut the chip to a thickness corresponding to a pitch (a) between the broach cutting teeth (21a to 21f) that lead in the direction of broaching (22) and forms the final bottom and a portion of the entire final profile flanks (15, 16) corresponding to the thickness of the chip cut, and;

-- wherein the first and second sides join the bottom-cutting-blade relief surface (24) and form first and second edges;

wherein all of the first sides are guide flanks (26a to 26f), lie within a same curved plane with the first edges being guide edges (27a to 27f) without a cutting ability to form the allocated profile flank (15);

wherein all of the second sides are relieved surfaces (29a to 29c) which do not touch the profiled flank (16) that the second sides face and which each extend in its own curved plane over the entire height of the respective broach cutting teeth, wherein all of the second edges are relieved edges (28a to 28f) without a cutting ability to form the allocated profile flank in the vicinity of the pitch (a);

wherein the broach cutting teeth (21) which are side by side relative to the direction of broaching (22), are disposed such that with respect to the central longitudinal axis (11) annular chip spaces (31) are arranged; and

wherein broach cutting teeth (21a to 21f), successive counter to the direction of broaching (22), are disposed in rows (6) so that all of the first and second sides are parallel to the central longitudinal axis (9), and

wherein the broaching of the final profiles takes place exclusively by means of the bottom cutting blades.

9. (New) An internal broach having broach cutting teeth for internally broaching final profiles (12), wherein

each of the broach cutting teeth cut a chip which in total form a final bottom (14) and final profile flanks (15, 16), of female serrations of a work piece (8), comprising

- a shank (1), which leads in a direction of broaching (22) and has a central longitudinal axis (9); and

- a toothed section (2) with several rows (6) of broach cutting teeth (21a to 21f), the rows (6) being disposed successively counter to the direction of broaching (22);

-- with successive broach cutting teeth (21a to 21f) being allocated to each other for broaching a profile (12) of a depth;

-- with each of all the broach cutting teeth (21a to 21f) in the several rows of the toothed section having only one each of first and second sides respectively facing the final profile flanks and a bottom cutting blade (23a to 23f) forming an edge on a bottom cutting blade relief surface (24) which edge extends as an arc of a circle between the first and second sides so that the cutting blade cuts over a full final profile width (b);

-- wherein the circles are concentric;

-- wherein the bottom cutting blades (23a to 23f) of successive and associated broach cutting teeth (21a to 21f)

each cut the chip to a thickness corresponding to a pitch (a) between the broach cutting teeth (21a to 21f) that lead in the direction of broaching (22) and forms the final bottom and a portion of the entire final profile flanks (15, 16) formed corresponding to the thickness of the chip cut, and;

-- wherein the first and second sides join the bottom-cutting-blade relief surface (24) and form first and second edges;

wherein all of the first sides are guide flanks (26a to 26f), lie within a same curved plane with the first edges being guide edges (27a to 27f) without a cutting ability to form the allocated profile flank (15);

wherein all of the second sides are relieved surfaces (29a to 29c) which do not touch the profiled flank (16) that the second sides face and which each extend in its own curved plane over the entire height of the respective broach cutting teeth, wherein all of the second edges are relieved edges (28a to 28f) without a cutting ability to form the allocated profile flank in the vicinity of the pitch (a);

wherein broach cutting teeth (21) which are side by side relative to the direction of broaching, are disposed such that with respect to the central longitudinal axis (11) helically extending chip spaces (31') are arranged; and

wherein broach cutting teeth (21a to 21f), successive counter to the direction of broaching (22), are disposed in rows (6) so that all of the first and second sides are parallel to the central longitudinal axis (9), and

wherein the broaching of the final profiles takes place exclusively by means of the bottom cutting blades.